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## SPECIFICATION SHEET

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### **Supply, installation and commissioning of *Wafer Dicing Preparation Equipment* for the ICFO, financed by FEDER Catalunya 2021 - 2027**

<b>FILE NUMBER: ICFO-2026-035</b>
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## CLAUSE 1. Object of the contract

The purpose of this contract is the supply, installation and commissioning of a **Wafer Dicing Preparation Equipment** for the ICFO, financed by FEDER Catalunya 2021 - 2027.

The types of items supplied are linked to the CPV (Common Public Procurement Vocabulary) **38000000-5** Laboratory, optical and precision equipment (except glasses).

## CLAUSE 2. Needs to satisfy

PhotonChip is a platform project that will help bring photonic technologies, in particular integrated photonics and photonic chips, from scientific feasibility to prototype stage to be applied in, for instance, communications as 6G transceivers, sensors, quantum computing and technology platforms.

Once operational, PhotonChip will cover the whole photonic chip value chain (design, packaging, testing) and train new experts thanks to dedicated programs.

As part of the Institute of Photonic Sciences (ICFO), PhotonChip will use advanced technologies as quantum technologies for cybersecurity, virtual and augmented reality, artificial intelligence, and machine learning.

In the development of the project, ICFO needs to acquire the supply of a **Wafer Dicing Preparation Equipment**, including several ancillary systems for wafer preparation and handling, for the dicing process

Wafer Dicing Preparation Equipment must comprise the following three equipment units:

- 1) *Manual foil moulder*, enabling the mounting of wafers onto tape and frames for processing in the dicing saw.
- 2) *UV-curing station*, providing precise and reliable UV exposure to reduce the adhesion force of UV tape/film applied to wafers or frames.
- 3) *Manual wafer expander*, used to uniformly expand the tape after dicing to separate individual dies and prevent edge damage.

### CLAUSE 3. Technical requirements

#### Technical proposal structure - minimum mandatory equipment characteristics

The minimum technical specifications for each equipment in the are defined below.

- 1) *Manual Foil Mounter*. The manual foil mounter used to mount wafers onto tape and frames for subsequent dicing processes must include:
  - a) Capability to mount multiple wafer sizes, up to 12".
  - b) Tooling required for handling 12" and 8" frame sizes.
  - c) Tooling required for handling dicing tape with a protective film.
  - d) Interchange vacuum chucks for 4", 6", 8" and 12" wafer sizes.
  - e) Silent Vacuum pump for vacuum chucks.
  - f) Fixtures for ESD protection and control.
  - g) Starting kit for machine setup including at minimum: stainless steel dicing frames (20 units), chuck protection sets (3 units), tape cutting blades (30 units).
  
- 2) *UV-Curing Station*. The UV-curing station, used to reduce adhesion force of UV tape/film on wafers or frames, must meet the following minimum requirements:
  - a) UV-LED flash system with exposure homogeneity within  $\pm 5\%$
  - b) Capability to handle multiple wafer sizes, up to 12".
  - c) Tooling required for 12" and 8" frame sizes.
  - d) Software-controlled processing recipes.
  - e) UV-LED calibration and correction.
  - f) Fixtures for ESD protection
  
- 3) *Manual wafer expander*. The manual wafer expander, intended to uniformly expand the dicing tape after wafer singulation in order to separate individual dies and avoid edge damage, must comply with the following minimum requirements:
  - a) Capability to accommodate 8" and 12" dicing frames.
  - b) Heated base plates and expansion heads, supporting multiple expansion operations, for 8" and 12" grip rings.
  - c) Temperature controller for heated chucks.
  - d) Starting kit for machine setup including at minimum: grip rings (20 units).

#### Technical documentation or manuals to be delivered

A set of documentation shall be provided, covering the following topics:

- Comprehensive system user manual, including both hardware and software descriptions (where applicable), routine servicing and troubleshooting.

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#### **CLAUSE 4. Power distributions and safety**

The system shall include:

- Electrical Operation: 230V  $\pm$ 10%, 50 Hz (per UNE-EN 61010-1, Spanish adoption of IEC 61010-1)
- CE-certification
- Electrostatic Discharge (ESD) protection fixtures, as indicated in Clause 3.

#### **CLAUSE 5. System layout and services**

The proposal shall include a set of “system layout and services documentation”, containing the following information:

- System layout, including overall footprint, weight, drawings and detailed description of the different system components.
- Installation and start-up requirements, including required utilities, service connections, and any applicable environmental specification.

#### **CLAUSE 6. Transportation, installation, start-up and training**

- Contract includes the installation and start-up of the system, including system checking, functional tests and the supply of all those elements necessary for its correct operation
- The proposal will include transportation to ICFO’s facilities including insurance and all export/import and customs duties.
- Any other customs or miscellaneous expenses, unexpected and not covered in the tender, which may arise until the equipment arrives at ICFO, must initially be borne by the Supplier and will be reimbursed by ICFO upon submission of supporting documentation proving the actual incurrence of such expenses.
- The machine will be placed in the designated location by ICFO. The contractor shall cover all costs, organization, and coordination related to the placement, including the provision of any required specialized equipment or vehicles, as well as any necessary component disassembly and reassembly for unloading and transportation inside the building, strictly following the route specified by ICFO.
- The contractor will be responsible for the removal and proper disposal of the packaging when the machine is delivered and unpacked, or its storage during the warranty period in case the original packaging needs to be kept.

#### **Process qualification.**

No Factory Acceptance Test (FAT) is required for the proposed system. The Site Acceptance Test (SAT) will be carried out at ICFO facilities. Proper functionality of the equipment will be verified by ICFO technical team during installation and start-up at ICFO facilities.

#### CLAUSE 7. Warranty and Follow-on Support

- 1-year Full Warranty on all parts and components of the system irrespective of the manufacturer. The warranty will include the replacement of any faulty or damaged part(s) during normal use of the system, no matter the manufacturer of the component(s). It will cover any cost related with the disassembly, transportation, repair and re-assembly of the damaged component(s), including all travelling and living costs of the required service engineer(s). An on-site repair, or a justified alternative to reduce the system down time to the minimum, will always be the first service option. A team of properly qualified and skilled service engineers will have to be available.
- System lifetime support.
- Spare parts will be available during, at least, 10 years after system supply.

#### CLAUSE 8. Training

The contractor shall provide an on-site briefing at the time of the installation.

#### CLAUSE 9. Delivery and Installation Time

The machine should be delivered within **3 months starting from the formalization of the contract.**

#### CLAUSE 10. Target price

- The target price for the system is **135.000 €** (VAT excluded).
- Payment terms: Full payment will be made once the final receipt of supply, installation and commissioning is issued.

Castelldefels, on the date of its digital signature

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Optoelectronics